

## CLAIM AMENDMENTS

Amend the claims to read as follows:

1. (currently amended) An improved method of correcting for atmospheric effects on a remote image of the Earth's surface taken from above, wherein the image comprises a number of images of the same scene each including a large number of pixels, each at a different wavelength band, and including infrared through visible wavelengths, comprising:

providing a radiation transport model that relates spectral radiance to spectral reflectance via a set of parameters;

providing a discrete number of trial aerosol visibility values for at least one of one or both of trial aerosol property values and aerosol types;

using the radiation transport model to calculate the model parameter values for each of the trial aerosol visibilityies values;

selecting image pixels having a one or more presumed, predefined ratios of reflectances in among two or more specific different wavelength bands;

using the radiation transport model parameters to determine the surface reflectance for the selected image pixels for each of the specific~~two selected~~ wavelength bands for each combination of trial visibility value and trial aerosol property value or values, or aerosol type;

comparing the determined surface reflectances to the predefined ratio of reflectances;

~~determining from the comparison the differences between the determined reflectances and the ratio predicted reflectances for one of the two selected wavelength bands; and~~

~~resolving from the comparison differences a corrected image visibility value for each trial aerosol property value or values or aerosol type.~~

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2. (original) The method of claim 1, in which using the radiation transport model to calculate the model parameter values includes performing calculations for the specific geometric conditions of solar illumination and sensor viewing that apply to the image being analyzed.

3. (original) The method of claim 1, in which using the radiation transport model to calculate the model parameter values includes performing calculations for a plurality of geometric conditions of solar illumination and sensor viewing, storing the calculation results, and interpolating the stored results to the specific geometric conditions that apply to the image being analyzed.

4. (original) The method of claim 1, in which using the radiation transport model to calculate the model parameter values includes performing calculations of the radiance from the surface that is scattered into the sensor by weighting the spectra from different parts of the surface according to their contributions to each pixel.

5. (original) The method of claim 1, in which the radiation transport model includes MODTRAN.

6. (original) The method of claim 1, in which the sensor viewing angle is nadir.

7. (original) The method of claim 1, in which the sensor viewing angle is off-nadir.

8-35 (canceled)

36. (new) The method of claim 1, in which the number of sets of either trial aerosol property values or aerosol types is greater than one, the number of specific wavelength bands is greater than two, the number of predefined ratios of reflectances is greater than one, and in which by comparing the determined surface reflectances to the predefined ratios of reflectances both the corrected image visibility value and the aerosol property value or values or aerosol type are resolved.

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